Reduction of risks from tailing dams for the population and the territory of Central Asia (on the example of Kyrgyzstan)

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Project goal

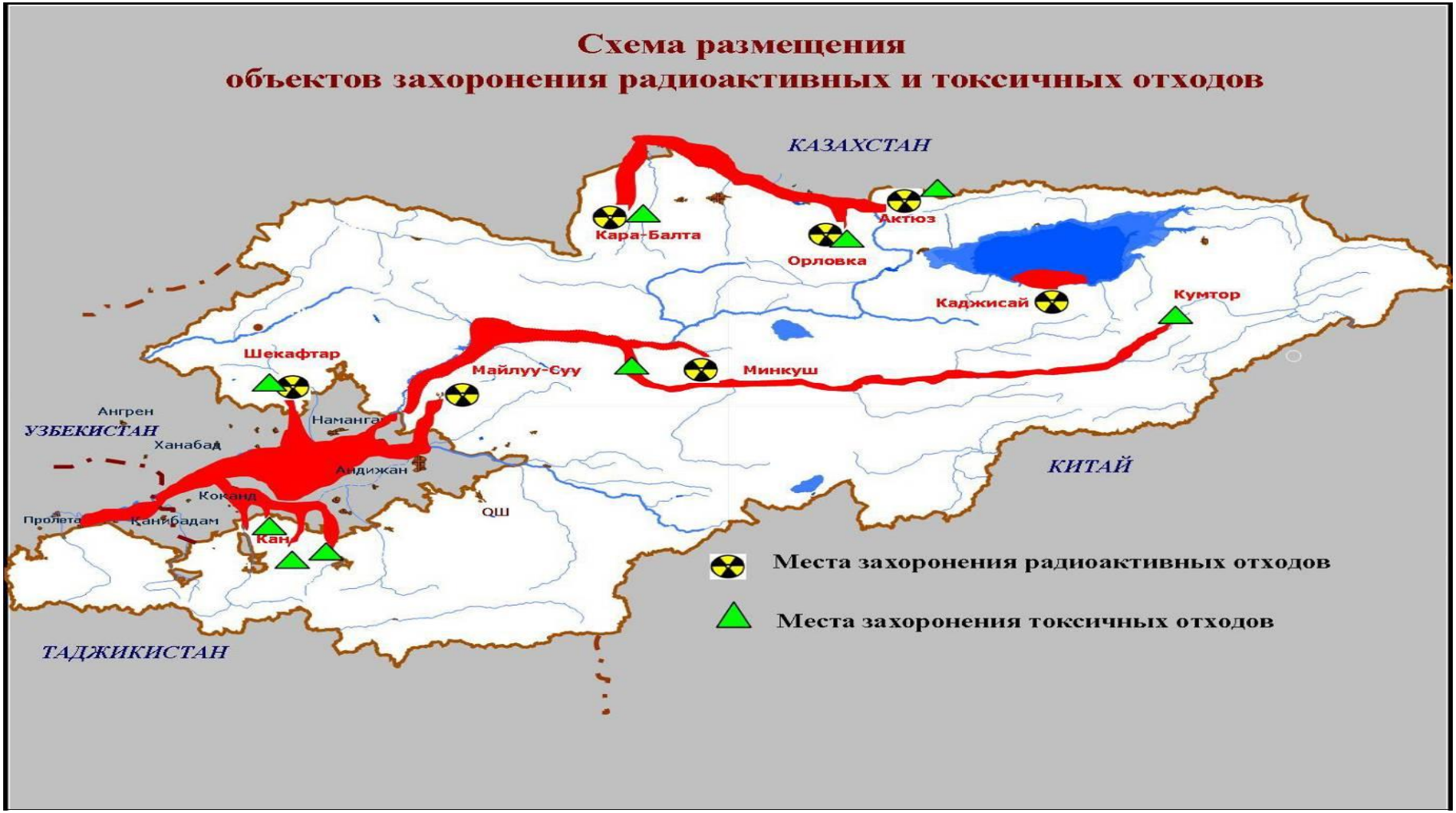
Conducting complex field instrumental radiological surveys, taking samples of water, plants, soil and biomass to assess the impact of tailing dams on public health and the ecosystem of Kyrgyzstan and transboundary areas with the states of Central Asia, for the organization of a rapid alert system and disaster risk reduction.

Project Justification

On the territory of the Republic 254.4 million cubic meters of mine waste are located in 92 facilities, which contain radionuclides as well as harmful and toxic to human health substances.

Under the Ministry of Emergency Situations of the Kyrgyz Republic, there are 36 tailing dams and 25 dumps with a total volume of 15.7 million cubic meters. They include 31 tailing dams with radioactive waste with a volume of 7.2 million cubic meters, and 5 with toxic waste with a volume of 5.2 million cubic meters, and 25 mine waste dumps of substandard ores with a volume of 3.3 million cubic meters.

Probabilistic contamination zone



Objectives of the project:

- 1. Conduct geo-ecological, radiological, hydro-geochemical field complex ground and remote cartographic explorations and surveys in the studied region.

- 2. Conduct inventory and certification of accounted objects (adits, mines, tailing dams, industrial waste collectors, mine waste dumps, populated areas, rivers basins, groundwater, vegetation, wildlife, and public health).

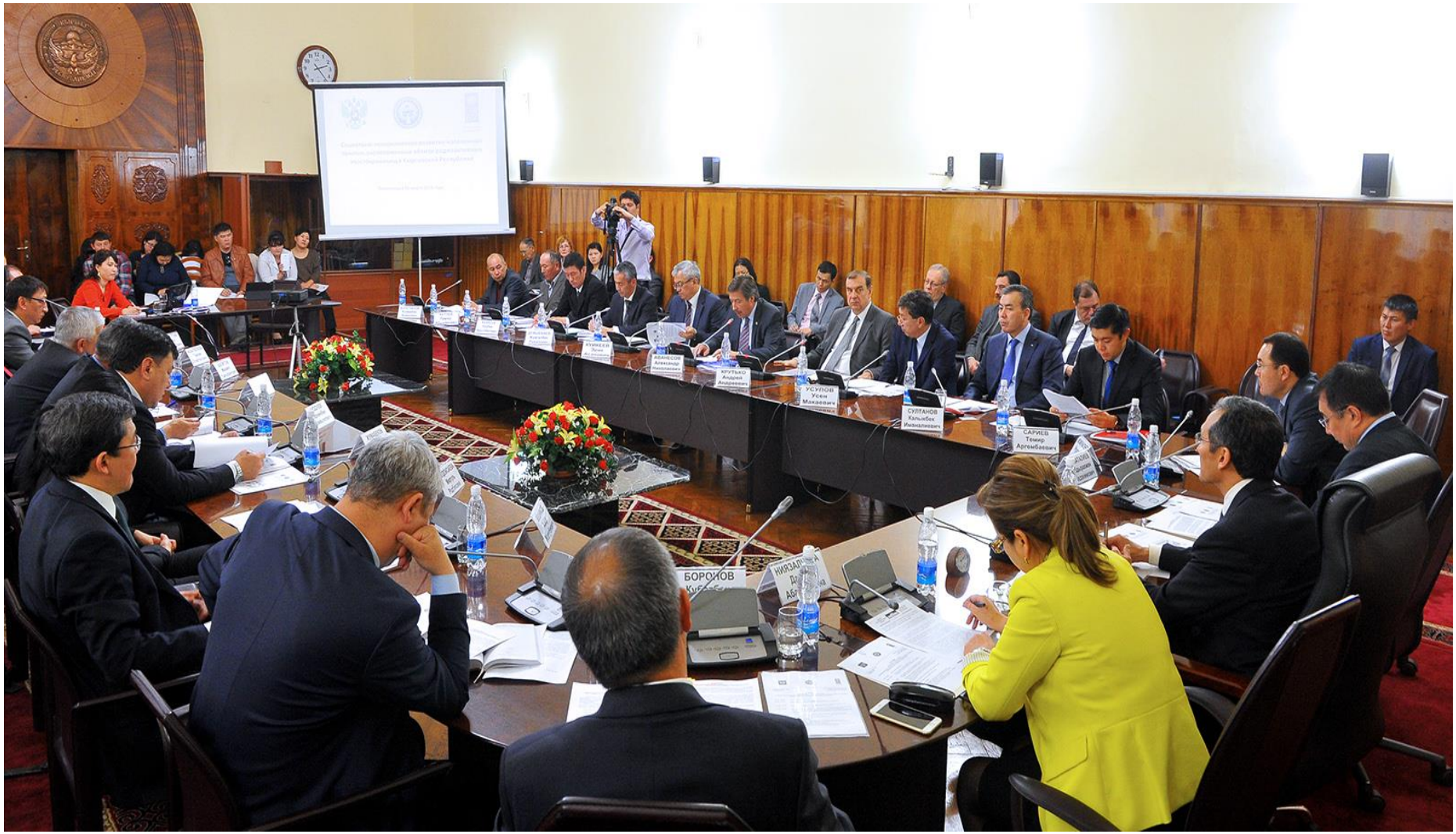
- 3. Estimate of levels of negative influence of industrial uranium tails and decay products on ground/surface water.

- 4. Identificate of impact level of xenobiotics to terrestrial and aquatic live systems.

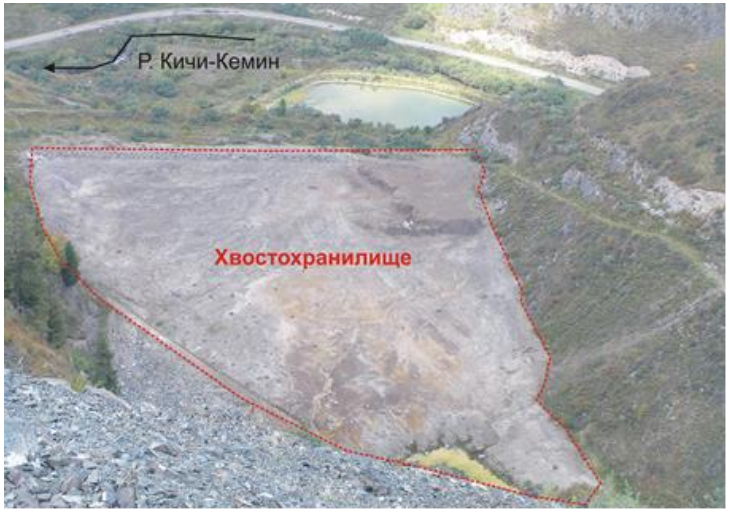
- 5. Determine of risks for the population from the use of materials based on radioactive substances.

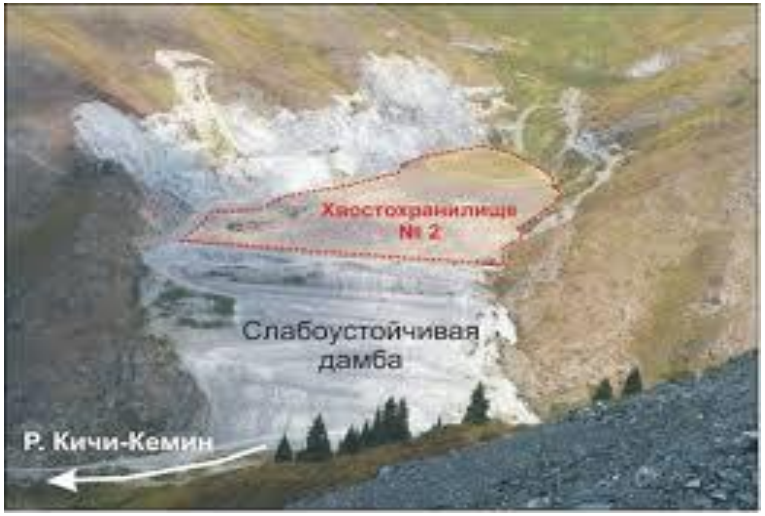
- 6. Implement into practice of modern achievements studies and new devices for quantitative determination of radionuclides.
- 7. Search for effective monitoring, warning, and risk assessment technologies in order to create an early warning system and protect the population from possible radiation emergencies.
- 8. Implementation of a complex of remote and on-ground field works to obtain high-precision specialized satellite imagery, aerial photographs and cinematographic documentation on the surveyed areas, from sources of radioactive contamination and pollution, through river basins to the transit of hazardous ingredients to transboundary densely populated areas with Central Asian countries for mapping.
- 9. Development of unified passports in compliance with international standards, as well as regional and local maps of radiation situation monitoring for the territory of Kyrgyzstan which

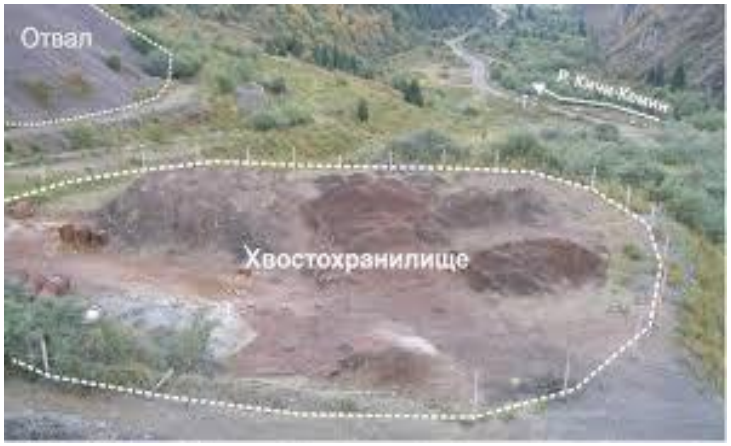
Problems of radioactive tailing dumps are discussed at the governmental level



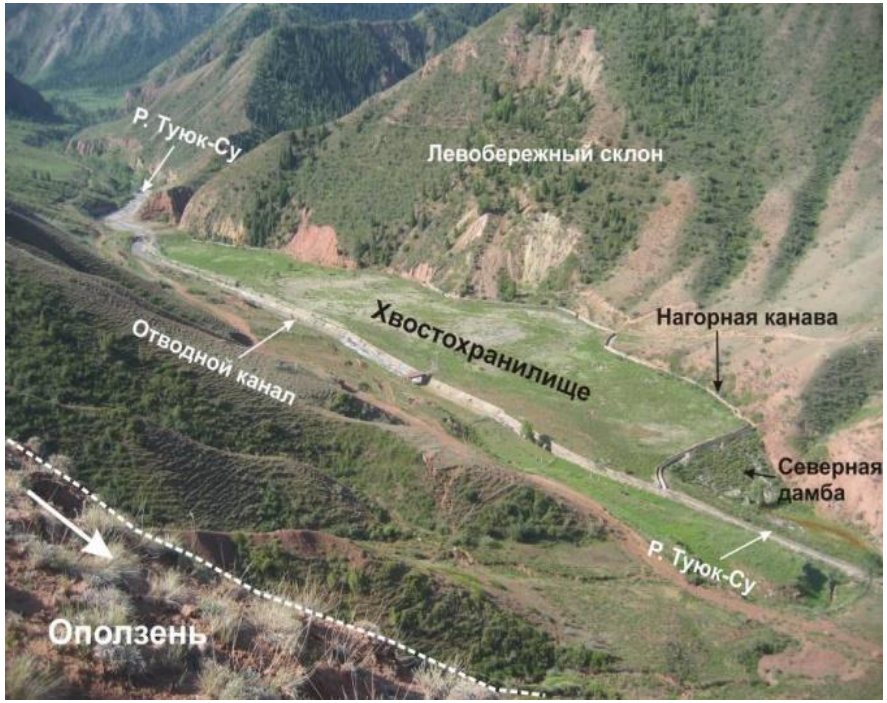
Ak Tuz Tailing Dams

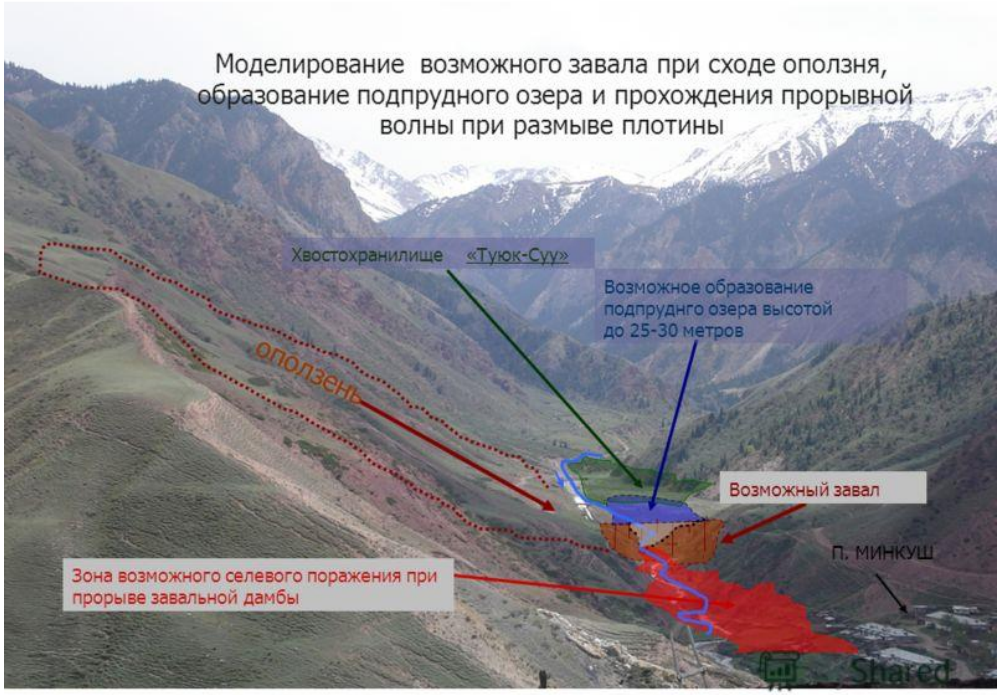






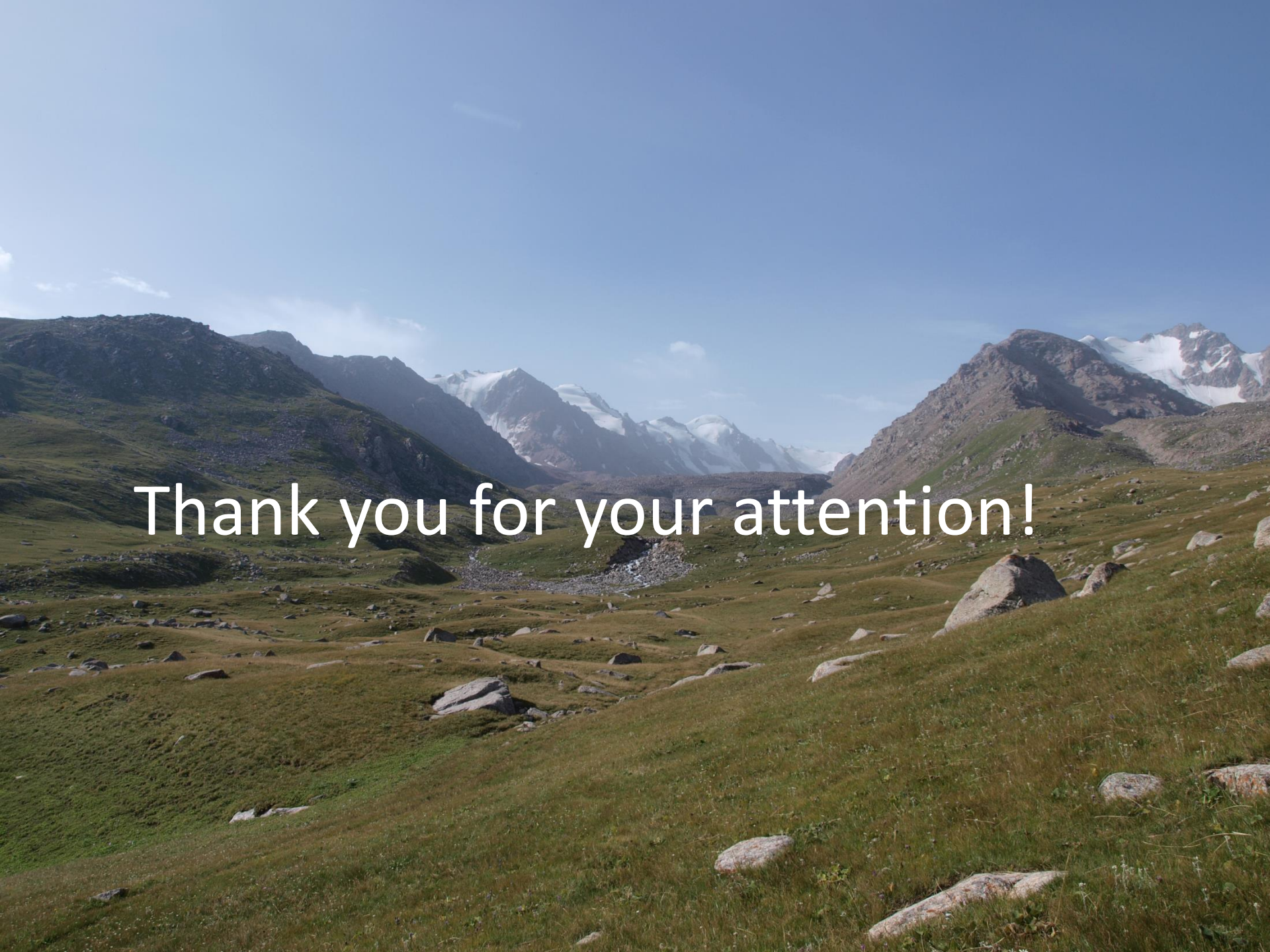
Tuyuk-Suu Tailing Dams





Expected results of the project

The cause and effect characteristics of the radiation situation in Kyrgyzstan and its regions will be comprehensively investigated, and sources of risks and probable risks of radiation accidents and disasters, as well as transboundary threats of radioactive contamination emissions in Kazakhstan and Uzbekistan will be determined


Thank you for your attention!